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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,390	01/30/2004	Ronald King	2144.051USU	3804

7590 02/12/2007  
Charles N.J. Ruggiero, Esq.  
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.  
10th Floor  
One Landmark Square  
Stamford, CT 06901-2682

EXAMINER
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LAWRENCE JR, FRANK M

ART UNIT	PAPER NUMBER
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1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/768,390

Applicant(s)

KING ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 14-36 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 23-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22, 27-30 and 33-36 is/are allowed.
- 6) ☒ Claim(s) 1-5, 9-11, 14-19 and 31 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant is requested to cancel the withdrawn claims if a response to this action is intended to put the application in condition for allowance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 9-11 and 14-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Conrad et al. (6,156,102).
4. Conrad et al. '102 teach a method for recovering water from air, comprising contacting humid air with 40% lithium chloride solution in a contactor (12) to produce water-rich solution, heating the water-rich solution in an evaporator/condenser vessel using waste heat recovered from condensation to evaporate water from solution, condensing the evaporated water, and recovering the condensed water in a tank (figure 1, col. 5, lines 1-14, col. 7, lines 18-46). The collected water is flowed to the tank (18, 122) and gravity can be used (col. 7, lines 33-35). Heat energy produced by the condensation is transferred to a heat collecting flow (106) that effects vaporization when it is recirculated (figure 3a, col. 11, line 10 to col. 12, line 43). Vacuum pumps (116) are used to maintain a subatmospheric pressure in the evaporator/condenser vessel (col. 11, lines 20-37).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conrad et al. '102.

7. Conrad et al. '102 disclose all of the limitations of the claims except that the LiCl solution is supersaturated. It is submitted that because a 40% LiCl solution is disclosed and that the solution is further saturated by the liberation of water due to evaporation, one skilled in the art would understand that the solution would become supersaturated. The discussion on pages 5-6 of the disclosure of the instant invention supports this assumption.

***Allowable Subject Matter***

8. Claims 6-8 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. Claims 22, 27-30 and 33-36 are allowed.
10. The following is an examiner's statement of reasons for allowance: Reasons for allowance for claims 22 and 27-30 are given in the previous office action. Claims 33-36 are allowable because each contains a limitation in one of allowable claims 6-8 and 20 including the limitations of intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

11. Applicant's arguments filed December 28, 2006 have been fully considered but they are not persuasive. Applicant argues that the Conrad patent fails to disclose vacuum pumps for removing gases formed after the condensation step to maintain a pressure, however vacuum pumps (116) are disclosed for removing gases remaining after evaporation and condensation of the rich LiCl to maintain a subatmospheric pressure. Applicant also argues the Conrad fails to disclose transferring heat energy produced from condensation to a heat pipe, however heat energy produced by the condensation is transferred to a heat collecting flow (106) that effects vaporization when it is recirculated. The flow (106) originates from a conduit that anticipates the heat pipe and language of the claim.

12. Applicant further argues that Conrad fails to disclose the manner of flow of the collected water to the collection tank (124) and a step of equalizing pressure between the vapor space and the collection tank, however the water is flowed to tank (122) using conduits. Gravity flow is disclosed for transferring collected water to a collection tank (col. 7, lines 33-35). A pressure equalization step is not recited in the claims, however a pressure communication is established by flowing the water to the collection tank such as by gravity.

13. With respect to claim 31, the examiner agrees with applicant's argument that the criticality of using a supersaturated LiCl solution is established in the original specification,

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however this teaching indicates that one skilled in the art would understand that the solution used in Conrad is supersaturated as discussed in paragraph 7 above.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frank M. Lawrence  
Primary Examiner  
Art Unit 1724

*Frank Lawrence*  
2-8-07

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